



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

Deviation

C10-ARW
Job Sheet OH199918



Part No: C10-ARW

Job Qty: 1 pcs

Part Name: C-Series Remote Hook 10,000 lbs Lift Capacity

Order 18247



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 9/4/19

Job Tracking No:

Due Date: 9/6/19

Created By: Jennifer Renwick

Type: Rework - OH

Description: customer support case 12973 /

RA749

orig. SN 03-2284-02

Note: C-10 REV.D IPP REV:A 19.08.20 NEW ISSUE VERF:JFS

Ship Via: **NO COFS Needed for attached*

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier	Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier Lead Time	
100	Rework - 1 - Startup	1 pcs	9/6/19	9/6/19	0.00	0.00	External load - 1	AP 2019/09/05 JP Michel 5211449
110	External Load - 2 - B4B	1 pcs	9/6/19	9/6/19	0.00	2.00	External Load - 1 - B4B	
							External Load - 2 - B4B	
							External Load - 3 - B4B	
120	QC 5	1 pcs	9/6/19	9/6/19	0.00	0.00	QC 5 - 10	SEP 09 2019
							QC 5 - 12	
							QC 5 - 17	
							QC 5 - 18	
							QC 5 - 19	
							QC 5 - 22	
							QC 5 - 24	
							QC 5 - 3	
							QC 5 - 43	
							QC 5 - 49	
							QC 5 - 51	
							QC 5 - 58	
							QC 5 - 68	
							QC 5 - 9	
							QC 5 - 50	
							QC 5 - 30	
							QC 5 - 40	
							QC 5 - 61	
							QC 5 - 81	
140	Packaging 3-1 - Stock - B4B	1 pcs	9/6/19	9/6/19	0.00	0.00	Packaging 3 - 1 - B4B	
							Packaging 3 - 2 - B4B	
							Packaging 3 - 3 - B4B	



Container No: S211449



Part: C10
Job No: OH199918
Serial No/Batch: 03 - 2284 - 02
Revision: D
Inspector:
Exp Date:
Instructions:

Dart Aerospace Ltd.
1270 Aberdeen Street
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CANADA
TEL.: 1 813 632 - 5250
Email: sales@dartaero.com
www.dartaerospace.com

Date: 09/25/19



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Container No: S211449



Part: C10

Job No: OH199918

Serial No/Batch: 03-2284-02

Revision: D

Inspector:

Exp Date:

Instructions:

Date: 09/25/19

Plex 9/4/19 2:00 PM Dart.Renwick.Jennife

					Packaging 3 - 4 - B4B	
					Packaging 3 - 5 - B4B	
					Packaging 3 - 6 - B4B	
					Packaging 3 - 7 - B4B	
					Packaging 3 - 8 - B4B	DAS 30 SEP 09 2019
					Packaging 3 - 9 - B4B	
					Packaging 3 - 10 - B4B	
					Packaging 3 - 11 - B4B	
					Packaging 3 - 12 - B4B	
					Packaging 3 - 13 - B4B	
					Packaging 3 - 14 - B4B	
					Packaging 3 - 15 - B4B	
					Packaging 3 - 16 - B4B	
					Packaging 3 - 17 - B4B	
					Packaging 3 - 18 - B4B	
					Packaging 3 - 19 - B4B	
					Packaging 3 - 20 - B4B	
					Packaging 3 - 21 - B4B	
					Packaging 3 - 22 - B4B	
					Packaging 3 - 23 - B4B	
					Packaging 3 - 24 - B4B	
					Packaging 3 - 25 - B4B	
					Packaging 3 - 26 - B4B	
					Packaging 3 - 27 - B4B	
					Packaging 3 - 28 - B4B	
					Packaging 3 - 29 - B4B	
					Packaging 3 - 30 - B4B	
					Packaging 3 - 31 - B4B	
					Packaging 3 - 32 - B4B	
					Packaging 3 - 33 - B4B	
					Packaging 3 - 34 - B4B	
					Packaging 3 - 35 - B4B	
					Packaging 3 - 36 - B4B	
150	DC - 1 - B4B	1 pcs	9/6/19	0.00 0.00	DC - 1 - B4B	DAS 21 SEP 19 2019
					DC - 2 - B4B	DAS 21 SEP 19 2019
200	QC 21 - FG	1 pcs	9/6/19	0.00 0.00	QC 21 - FG - 21	DAS 21 SEP 19 2019
					QC 21 - FG - 70	DAS 21 SEP 19 2019
					QC 21 - SA - 53	
999	Rework - 1 - Startup Returns	1 pcs	9/6/19	0.00 0.00	QC 6 - 40 - S	
					QC 6 - 61 - S	
					QC 6 - 68 - S	
					QC 6 - 9 - S	NIA DAS 21 SEP 19 2019
					QC 6 - 81 - S	
Part Op 110 - 1- ASSEMBLE AS PER DWG 2- PERFORM ALL NECESSARY TEST USING FAI TEST SHEET.						
Descriptions: 120 - QC5- Inspect part completeness to step on W/O						
140 - Identify as per dwg & Stock Location: 51349						
150 - Document Control - Photocopy blue file and create labels						
200 - QC21- Final Inspection - Work Order Release						

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
C10-AR	C-Series Remote Hook 10,000 lbs Lift Capacity	1 Ea (1 ea)	100-Rework - 1 - Startup	S211420
01004-08-047	3/14 Type SJTOW Cable	1 ft (1 ea)	110-External Load - 2 - B4B	5/79682
32448	16-14 AWG Knife Connector	2 Ea (2 ea)	110-External Load - 2 - B4B	5/51100
C45-8-4	Solenoid Cover Gasket	1 pcs (1 ea)	110-External Load - 2 - B4B	5/99513
EL-PLUG-M	3-Prong Male Spade Plug	1 Ea (1 ea)	110-External Load - 2 - B4B	5/92574

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Rework - 1 - Startup	C10	1	0	0
110-External Load - 2 - B4B	01004-08-047	1	818	0
	32448	2	53	0
	C45-8-4	1	34	0
	EL-PLUG-M	1	18	0

Part Specifications

Specifications could not be found.

Plex 9/4/19 2:00 PM Dart.Renwick.Jennifer

Jennifer Renwick

From: Jennifer Renwick
Sent: Tuesday, August 20, 2019 12:08 PM
To: Sian Willems; David Duval
Cc: Daniel Paquette; Support; Caroline Ashby; Ashley Beecraft; Linda Lacelle
Subject: RE: HTR-5904, C-10 Hook Case 12973

Will do Sian. Can you add the note about the C of C on the no charge order? CofC should have the following statement: tested per manual XXXXXX, list of parts replaced, not overhauled. John can sign the CofC.

Hi David,

In Dan's absence can you please add rework ops to do the following under part# C10-ARW:

Pull the C10-AR hook on under the Rework-Start-up – External load 1
Then we need to assembly the below parts on External load – B4B and test

- 01004-08-047 wire qty. 1
- 32448 connectors qty. 2
- C45-8-4 gasket qty. 1
- EL-GLUG-M plug qty. 1

QC5
Packaging
QC21

Thank you,
Jen

From: Michelle GagnonDonovan <mgagnondonovan@dartaero.com>
Sent: Tuesday, August 20, 2019 11:16 AM
To: Sian Willems <swillems@dartaero.com>
Cc: John Chuprun <jchuprun@dartaero.com>; Jennifer Renwick <jrenwick@dartaero.com>; Support <support@dartaero.com>; Caroline Ashby <cashby@dartaero.com>; Ashley Beecraft <abeecraft@dartaero.com>
Subject: RE: HTR-5904, C-10 Hook Case 12973

Hello,

Part is now in Plex.

FYI C10-AR already existed, not sure if it is for the same thing.

Thanks,

Michelle Gagnon-Donovan
Document Controller

DART AEROSPACE
T 1 613 632-5300 > 251

5201271



From: Sian Willems <swillems@dartaero.com>
Sent: Tuesday, August 20, 2019 11:06 AM
To: Michelle GagnonDonovan <mgagnondonovan@dartaero.com>
Cc: John Chuprun <jchuprun@dartaero.com>; Jennifer Renwick <jrenwick@dartaero.com>; Support <support@dartaero.com>; Caroline Ashby <cashby@dartaero.com>; Ashley Beecraft <abeecraft@dartaero.com>
Subject: FW: HTR-5904, C-10 Hook Case 12973

Hi Michelle,
Can you please create C10-ARW?

Hi Jen,
Once this is created, can you please tear back C10-OH job OH198445 to put C10-AR s/n 03-2284-02 back into stock. Can you please coordinate with PEC's to create a process routing for the ARW?

We will be changing the following parts:

- C10-AR hook qty. 1 s/n 03-2284-02
- EL314-SJTOW wire qty. 1
- 32448 connectors qty. 2
- C45-8-4 gasket qty. 1
- EL-GLUG-M plug qty. 1

As per our conversation with Marcel, hook should be re-tested and test report filed with job. CofC should have the following statement: tested per manual XXXXXX, list of parts replaced, not overhauled. John can sign the CofC.

I'm still waiting on an RO from the customer. As soon as I have this I will add an order to Plex to ship on.

Thanks,
SIAN WILLEMS
Director of Customer Support

DART AEROSPACE
T 1 613 632-3336 > 239
M 1 613 676-0577

From: Support
Sent: Monday, August 19, 2019 3:32 PM
To: Jennifer Renwick <jrenwick@dartaero.com>
Cc: Support <support@dartaero.com>
Subject: FW: HTR-5904, C-10 Hook Case 12973

Hi Jen,

We had to cut the EL314-SJTOW wire to inspect it. We should replace this. Also the 32448 connectors (qty. 2).

Since we removed the solenoid cover, Alain also recommends we replace the C45-8-4 gasket.

As a customer service, let's also send a replacement EL-GLUG-M.

I would like the old wire, connectors and plug returned to customer.

Should I have a n ARW revision part with a custom process routing created to handle this?

Thanks,
SIAN WILLEMS
Director of Customer Support

DART AEROSPACE
T 1 613 632-3336 > 239
M 1 613 676-0577

From: Michael Cleese <cleesem@htshelicopters.com>
Sent: Thursday, August 15, 2019 1:01 PM
To: Support <support@dartaero.com>
Cc: Jerry Sullivan <sullivanj@htshelicopters.com>; fournierr@htshelicopters.com; Lacey Cantin <lcantin@dartaero.com>
Subject: Re: HTR-5904, C-10 Hook

Good Morning.
Please return the hook as delivered.
Thank you

On Thu, Aug 15, 2019 at 6:00 AM Support <support@dartaero.com> wrote:

Hi Jerry and Michael,

Thank you for your email.

Currently this hook is in our repair shop pending approval to proceed with an overhaul to return the unit to service. This was communicated to Rob on July 31.

Prior to this, Dart had completed a functional test and the test report was provided. Following the functional test, the hook solenoid housing and plug/wiring assemblies were disassembled to evaluate the condition of these components and no fault was found.

We can only provide a return to service certification if the overhaul is done. Otherwise, we can return the hook to you as it was delivered to Dart.

Please let us know how you would like to proceed.

Thanks,
SIAN WILLEMS



DART AEROSPACE

T 1 613 632-3336 > 239

M 1 613 676-0577

From: Lacey Cantin <lcantin@dartaero.com>

Sent: Tuesday, August 13, 2019 3:38 PM

To: Jerry Sullivan <sullivanj@htshelicopters.com>; Michael R Cleese <cleesem@htshelicopters.com>; Support <support@dartaero.com>

Subject: RE: HTR-5904, C-10 Hook

Good afternoon Jerry and Michael,

I have looped in my Support Team here as they will be able to get back to you in regards to the certification since testing was completed and everything passed.

Please don't hesitate to let me know if I can be of further assistance.

Kindest Regards,

LACEY CANTIN

Inside Sales Representative

DART AEROSPACE

T 1 514 907-5959 > 247

1 800 556- 4166

www.dartaerospace.com

For technical support, click [here](#).

To access technical documentation, create your account [here](#).



From: Jerry Sullivan [<mailto:sullivanj@htshelicopters.com>]
Sent: August 13, 2019 2:16 PM
To: Lacey Cantin <lcantin@dartaero.com>; Michael R Cleese <cleesem@htshelicopters.com>
Subject: FW: HTR-5904, C-10 Hook

Jerry Sullivan

Helicopter Transport Services, LLC

14497 Keil Road NE

Aurora, OR 97002

Ph: 503-776-9300

Fax: 503-776-9305

From: Michael Cleese [<mailto:cleesem@htshelicopters.com>]
Sent: Tuesday, August 13, 2019 11:12 AM
To: cantin@dartaero.com
Cc: Jerry Sullivan <sullivanj@htshelicopters.com>; John Kenning <kenningj@htshelicopters.com>
Subject: HTR-5904, C-10 Hook

Good morning:

This is the hook that we had sent to you for testing. The P/O is requesting this unit be overhauled however you have tested this unit and was found serviceable. I wouldn't thin it requires an overhaul. Is it possible to certify as serviceable and ship it back?

Michael Robert Cleese

Logistics and Procurement Manager

Helicopter Transport Services LLC

Phone: 503-776-9300 x 111

Fax: 503-776-9305

Cell: 541-647-8650

14497 Keil Rd NE, Aurora, OR 97002

This e-mail message has been scanned by SEG Cloud

Michael Robert Cleese

Logistics and Procurement Manager

Helicopter Transport Services LLC

Phone: 503-776-9300 x 111

Fax: 503-776-9305

Cell: 541-647-8650

14497 Keil Rd NE, Aurora, OR 97002

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P/N	Revision	Drawing Specified Wire	Acceptable Alternate Wire
C2	2	MIL-C-27500 11-14416	N/A
C3	2	MIL-C-27500 11-14417	N/A
C10	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C15	2	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C20	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C45	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C60	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C250	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA3-2	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA3-3	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA3-4	3	EL 414-ARTIC 4/14	Texcan 01121-744A5
SWA6A-2	E	Texcan 01121-724AM	N/A
SWA6A-3	E	Texcan 01121-734A5 or 01004-08-047	N/A
SWA6A-4	E	Texcan 01121-744A5	N/A
SWA6A-6	E	Texcan 04121-764A5	N/A
SWA6A-8	E	Texcan 12701-08-014 or McMaster 7081K38	N/A
SWA10A-2	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA10A-3	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA10A-4	3	EL 414 ARTIC 4/14	Texcan 01121-744A5
SWA10A-6	3	EL 616 ARTIC	Texcan 04121-764A5
SWA10A-8	3	Polar Wire 30806	Texcan 12701-08-014 or McMaster 7081K38
SWA15A-2	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA15A-3	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA15A-4	1	EL 414 ARTIC 4/14	Texcan 01121-744A5
SWA15A-6	1	EL 616 ARTIC	Texcan 04121-764A5
SWA15A-8	1	EL 816 ARTIC	Texcan 12701-08-014 or McMaster 7081K38
SAW25A-2	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SAW25A-3	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SAW25A-4	1	EL 414 ARTIC 4/14	Texcan 01121-744A5
SAW25A-6	1	EL 616 ARTIC	Texcan 04121-764A5
SAW25A-8	1	EL 816 ARTIC	Texcan 12701-08-014 or McMaster 7081K38

Work Order 04199918

Customer RA 749

Serial Number 03-2284-02

Date 2019-9-05

# of Releases	Load (Lbs.)	Release Method	Remarks	Result	Pass/fail
1	25,000	Static Hold	Hold for two Minutes and reduce load to zero	N/A	Pass
10	5,000	Electircal, 25 volts	No "hang ups" permitted	N/A	Pass
2	10,000	Electircal, 22 volts	Current shall not exceed 12.4A	9.3 Amp.	Pass
2	7,500	Electircal, 22 volts	Current shall not exceed 12.4A	9.2 Amp.	Pass
2	5,000	Electircal, 22 volts	Current shall not exceed 12.4A	8.7 Amp.	Pass
2	2,500	Electircal, 22 volts	Current shall not exceed 12.4A	8.8 Amp.	Pass
2	500	Electircal, 22 volts	Current shall not exceed 12.4A	8.9 Amp.	Pass
1	10,000	Electircal, 20 volts	Current shall not exceed 11.3A	7.8 Amp.	Pass
1	10,000	Electircal, 28 volts	Current shall not exceed 15.8A	11.3 Amp.	Pass
1	10,000	Manual		N/A	Pass
1	10,000	Impact Test	Impact shackle 10 times, shall not release	N/A	Pass
1	N/A	Solenoid Ohms	Shall not exceed 1.7-2.0 Ohms	1.7 Ohms	Pass
1	N/A	Electircal Continuity	Across both wires	N/A	Pass

Test Conducted By Michel Lalonde
Technician

Signature: Sylvie Sanchez
QC 5 Small FAB / QA

Submit

Entered: 7hDate: Oct 8/19NCR No. 19-74 09**WORK ORDER NON-CONFORMANCE / ROUTE UPDATE**Route update only ☐

Job: <u>OH 199918</u> Part No. <u>C series hooks and SWA Swivels</u>	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☒ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐		
Date: <u>2019/09/05</u>	Sequence #:	QTY Affected: <u>1</u>	MRB (QSI042) May, 9 2019 <i>M. Lee</i>	
Description Work Order Deviation The electrical wires listed under "Acceptable Alternate Wire" on the attached sheet are acceptable to use in place of the "Drawing Specified Wire"		Disposition This deviation is acceptable. No change to fit form or function. The job route must specify the wire that is called out on the drawing The inventory P/N must reflect the same P/N that was received from a vendor		Completed By <u>A. PATRY</u> Lead hand / Supervisor DAS 30 9-89 SEP 09 2019 QC / QA Coordinator 68 9-89 SEP 09 2019
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☒ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☒ Finish ☐ Part Lost/Missing ☐ Misread ☐		
Other/Details:				